

IN THE CLAIMS

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1. (Currently amended) A method of providing frequency correction for a spread spectrum communication receiver, said receiver being arranged to despread a digital code-spread signal having a first data rate to provide at least one despread data signal having a second, lower data rate, wherein said method comprises the steps of:

- i) determining a frequency offset by processing successive samples of said despread data signal;
- ii) generating a correction sequence from said determined frequency offset; and
- iii) combining said digital code-spread signal having said first data rate with said correction sequence obtained from said despread data signal having said second, lower data rate to correct the determined frequency offset.

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2. (Original) The method of claim 1 further comprising the step of filtering the determined frequency offset prior to the generation of a correction sequence therefrom to reduce noise therein.

3. (Original) The method of claim 1 wherein said step of determining a frequency offset includes the performance of a data processing operation comprising the calculation of the mathematical argument of a complex sample multiplied by the complex conjugate of a preceding complex sample.

4. (Original) The method of claim 1 wherein the communication system is a code division multiple access communication system and wherein the frequency offset is determined from consecutive symbol samples and the frequency offset is corrected by multiplying received data by a correction factor prior to despreading to obtain said symbol samples.

5. (Original) The method of claim 1 wherein said correction sequence is an up-sampled complex correction sequence  $Z_{\text{offs}}(k)$ , where  $Z_{\text{offs}}(k)$  is equal to  $1 \times \exp \{j\phi_{\text{offs}}(k)\}$  where  $\phi_{\text{offs}}(k)$  represents phase offset values at the first rate which are linearly interpolated from an average phase difference at the second rate.

6. (Currently amended) A spread spectrum communication system comprising a plurality of receivers for receiving transmitted signals, wherein each receiver comprises:

an RF signal receiver for generating an analog signal from a received RF signal;

an analog to digital converter for converting said analog signal into a code-spread digital signal;

a digital signal despread for processing a code-spread digital signal having a first data rate to obtain a despread digital signal having a second data rate, said second data rate being lower than said first data rate; and

a frequency corrector,

wherein said frequency corrector comprises a feedback loop including a frequency offset detector for obtaining a measure of a frequency offset from said despread digital signal and a frequency correction generator for generating a frequency correction

and a combiner for combining said frequency correction with said code-spread digital signal to correct said frequency offset.

7. (Original) A spread spectrum communication system according to claim 6 wherein said feedback loop includes a filter for filtering said measure of said frequency offset to reduce noise therein.

8. (Currently amended) A spread spectrum communication system according to claim 6 wherein said frequency offset detector ~~comprises a data processor for performing~~ is adapted to perform a mathematical operation of determining the mathematical argument of a complex sample of said despread digital signal multiplied by the complex conjugate of an immediately preceding sample of said despread digital signal.

9. (Currently amended) A spread spectrum communication system according to claim 6 wherein said frequency corrector includes a multiplier for multiplying said code-spread digital signal by a correction factor prior to despread said code-spread signal.

10. (Currently amended) A spread spectrum communication system according to claim 6 wherein said frequency correction generator comprises an interpolator for calculating phase offset values for said code-spread digital signal from an average phase difference calculated from samples of said despread signal.

11. (Original) A spread spectrum communication system according to claim 6 wherein said communication system is a code division multiple access system.

12. (Original) A spread spectrum communication system according to claim 6 wherein said communication system is a wireless local loop link.

13. (Currently amended) A receiver for a spread spectrum communication system comprising:

an RF signal receiver for generating an analog signal from a received RF signal;

an analog to digital converter for converting said analog signal into a code-spread digital signal;

a digital signal despreader for processing ~~a~~ the code- spread digital signal having a first data rate to obtain a despread digital signal having a second data rate, said second data rate being lower than said first data rate; and

a frequency corrector,

wherein said frequency corrector comprises a feedback loop including a frequency offset detector for obtaining a measure of a frequency offset from said despread digital signal and a frequency correction generator for generating a frequency correction and a combiner for combining said frequency correction with said code-spread digital signal to correct said frequency offset.

14. (New) The receiver of claim 13, further comprising a down-converter communicatively coupled between the analog to digital converter and the digital signal

despreader, wherein the down-converter down-converts the code-spread digital signal to a lower rate.

sub B17 15. (New) The receiver of claim 14, further comprising a timing circuitry communicatively coupled between the analog to digital converter and the down-converter to perform a timing correction function.

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contd 16. (New) The receiver of claim 6, further comprising a down-converter communicatively coupled between the analog to digital converter and the digital signal despreader, wherein the down-converter down-converts the code-spread digital signal to a lower rate.

sub B17 17. (New) The receiver of claim 16, further comprising a timing circuitry communicatively coupled between the analog to digital converter and the down-converter to perform a timing correction function.

18. (New) The method of claim 1, further comprising down-converting the digital code-spread signal to a lower rate.